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Fig. 1.

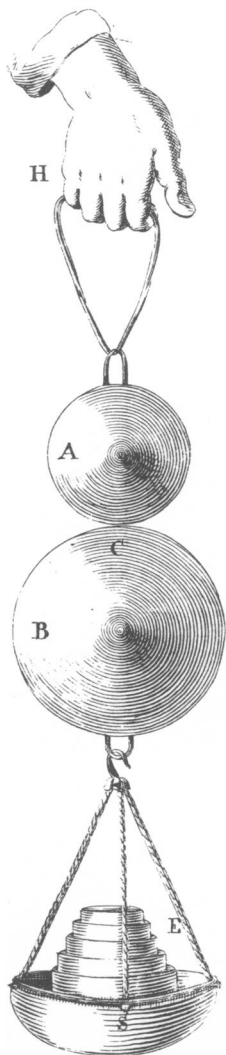
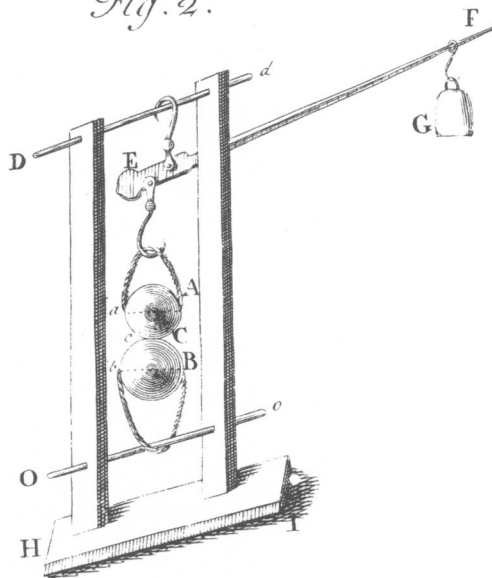


Fig. 2.



As soon as the Revolution of the Machine ceases, the Colures, Meridians or Hoops return to their Elliptical Figure, whose longest Diameter is the Axis of Revolution.

If the Force, by which the Hoops endeavour to keep their Figure, be consider'd, as the Gravity that keeps together the Parts of the Earth ; from this Experiment compar'd with what has been said in the Translations above-mention'd, it will appear that the Earth cannot preserve its Figure, unless it be an oblate Spheroid.

VI. *Some Experiments concerning the Cohesion of Lead, by the same.*

HAVING, on *Thursday* the 29th of *April* last, made mention of some Experiments, concerning the Cohesion of two Balls of Lead, applied together in a small Part of their Surface (so as to require a Weight far greater than what will overcome the Pressure of the Atmosphere, to separate them) made by Mr. *Trievall*, at *Newcastle*, and at *Edinburgh* ; I made the following Experiment to the same Purpose, before the *Royal Society*.

I took the Leaden Balls A and B (*Fig. 1.*) the first weighing one Pound, and the other two Pounds; and having from each of them cut off a Segment of about $\frac{1}{4}$ Inch in Diameter, I press'd them together with my Hand, with a little Twist, to bring the flat Parts to touch as well as I cou'd. The Balls stuck so fast, that when the Hand H, by means of a String, sustain'd the upper Ball A, the lower one B (by reason of its Contact at C) was sustain'd, tho' loaded with the

Scale

Scale S, and Weights E, which amounted to 16 Pounds. A little more Weight added separated them, and, upon viewing the touching Surfaces, it appear'd that they did not exceed a Circle of $\frac{1}{10}$ Inch Diameter; but this Surface can hardly be measur'd exactly, on account of its Irregularity. The Experiment was repeated several Times, and the Cohesion of the Balls was different every Time.

On *Thursday* the 6th of this Month, I made the Experiment another Way, at the Meeting of the *Society*, and just after their Rising, before several of the Members.

On the upper Pin or Bar of the Wooden Frame D d I H, I suspended the Steelyard E F, whose Hook held up a leaden Ball A of two Inches in Diameter, having an Hole thro' it, at A, to receive a String; the lower Ball B equal to, and prepar'd in the same Manner as the first, receiv'd the Pin O o thro' its String, so that G, the Weight of the Steelyard, was made Use of to separate the Balls, which happen'd when it was applied at the Number 20, in the first Experiment; but, in the three following Experiments, the Balls were not separated till the Weight was remov'd to the Numbers 25, 37, and 45, expressing Pounds on the Steelyard.

Lastly, the Balls being applied together as before, still cleaning the Surface of Contact with my Knife, and never making a Contact sensibly greater than what I mention'd before; the Weight G remov'd quite to the End F, where it weigh'd 47 Pounds, was not able to separate the Balls, so that I was oblig'd to make Use of another Steelyard; but as I intended to begin my Trials with the Weight, at the Number 47 upon this last Steelyard, by Mistake, I applied a wrong Weight instead of G, which, being of
7 Pounds

7 Pounds, instead of 4, separated the Balls. Having found the right Weight afterwards, I made several Trials, but cou'd not again bring the Force of the Contact to be equal to 47 Pounds. How much greater than 47 Pounds the Force of the Contact was in the 5th Experiment, I cou'd not determine, by reason of the above-mention'd Accident; but the Surface was much as before. I shall make some more Experiments of this Kind, and if I can come to any Certainty in the Measure of the touching Surfaces, and utmost Force of the Cohesion; I will communicate the same, and repeat them before the Society.

VII. *Extract of several Letters and Certificates sent to his Majesty the King of Great Britain, concerning a very particular Nævus Maternus, or Mole. Communicated by Dr. Steigertahl, Physician to his Majesty, F. R. S.*

JEREMIAS Rudolph von Walthausen, a Captain of the Garrison at Danneberg, near Lunebourg, was born October 24, 1680, with a very singular Mole upon his right Arm, Shoulder, and Hind-part of his Side, not unlike the Branch of a Vine, with its Leaves and Grapes. It hath been affirm'd and attested both by the Deceas'd himself, and several of his Relations and Friends, that his Mother, when big with Child, had an earnest Desire for Grapes, and impatient to stay, till they were full ripe, went down into the Garden to pull off some of those unripe; whereupon it happen'd, that a whole Branch with its Leaves and Grapes suddenly fell down upon